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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/551,646

07/21/2006

Robert Stevens

1028-0203PUS1

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EXAMINER

BOOSALIS, FANI POLYZOS

ART UNIT

PAPER NUMBER

2884

NOTIFICATION DATE

DELIVERY MODE

11/29/2007

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

mailroom@bskb.com

Office Action Summary

Application No.

10/551,646

Applicant(s)

STEVENS ET AL.

Examiner

Faye Boosalis

Art Unit

2884

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 September 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 September 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 12/30/05.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-7, 9, 11, 16-20 rejected under 35 U.S.C. 102(b) as being anticipated by Beetz, Jr. et al (US 6,384,519 B1).

Regarding claims 1, 18-20, Beetz, Jr. discloses a display (i.e. flat-panel display) comprising a layer of phosphor material (508); an amplification device; a plurality of field emission tips (i.e. field emission cathodes); and a driver device (504). Beetz, Jr. further discloses an electromagnetic radiation detector comprising a layer of a radiation sensitive material (i.e. electron emissive material); an amplification device; and one or more signal collectors, the amplification device comprising: a plurality of alternatively stacked layers of a dynode material (36) (col. 9, lines 21-32) and an electrical insulator (34) (col. 9, lines 11-13), each dynode layer having exposed secondary electron emissive material and each stacked layer having a plurality of apertures (70) (72) which align with aperture in adjacent layers to form a plurality of electron multiplier channels extending through the stacked layers (col. 11, lines 42-55), and power supply connections to each dynode layer for applying a predetermined voltage potential to each dynode layer (col. 16, lines 67-col. 17, line 9) wherein the one or more signal collectors (i.e. CCD) is positioned at the opposite end of the electron multiplier channels

to the radiation sensitive material such that a signal from the radiation sensitive material of the detection of electromagnetic radiation is amplified in one or more of the electron amplifier channels before being collected by the one or more signal collectors (col. 5, lines 50-col. 6, line 11).

Regarding claim 2, Beetz, Jr. discloses having a plurality of signal collectors with each signal collector being associated with one or more electron multiplier channels (col. 20, lines 45-51).

Regarding claim 3, Beetz, Jr. discloses wherein the walls of the apertures in each dynode layer are tapered toward the one or more signal collectors (col. 11, lines 55-63).

Regarding claim 6, Beetz, Jr. discloses wherein the one or more signal collectors contain phosphor and emit light in response to incident electrons from the electron multiplier channels (col. 5, lines 66- col. 6, line 12).

Regarding claims 7, 17 and 11, Beetz, Jr. discloses wherein the continuation monolithic array of electronic multiplier channels having an upper active surface extending at least 1 m^2 (i.e. 5 to 10 microns) (col. 4, lines 30-34).

Regarding claims 4-5 and 9, Beetz, Jr. discloses an x-ray imaging device comprising a layer of x-ray radiation sensitive material; amplification device; and an image processor (i.e. PMT), the amplification device comprising a plurality of alternatively stacked layers of a dynode material (36) (col. 9, lines 21-32) and an electrical insulator (34) (col. 9, lines 11-13), each dynode layer having exposed secondary electron emissive material and each stacked layer having a plurality of apertures (70) (72) which align with aperture in adjacent layers to form a plurality of

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electron multiplier channels extending through the stacked layers (col. 11, lines 42-55), and power supply connections to each dynode layer for applying a predetermined voltage potential to each dynode layer (col. 16, lines 67-col. 17, line 9) and a plurality of anodes located at the ends of the electron multiplier channels, each anode being associated with one or more channels and having an image data link for supplying position sensitive image data to the image processor for generating a two-dimensional image of x-ray radiation incident on the image device (col. 17, lines 53-57 and col. 20, lines 45-51).

Regarding claim 16, Beetz, Jr. amplification device comprising: a plurality of alternating stacked layers of a dynode material

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Beetz, Jr. et al (US 6,384,519 B1) as applied to claim 9 above.

Regarding claim 10, Beetz, Jr. discloses a micro-dynode electron multiplier comprising a multi-pixel imaging device of extremely high sensitivity and resolution (See Abstract). Beetz, Jr. is silent with regards to the image resolution pixels, however it would have been obvious for a person having ordinary skill in the art at the time the invention was made to use an image resolution of 50 pixels per mm, since it has been

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held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or working ranges involves only routine skill in the art. In re Aller, 105 USPQ 233.

5. Claims 13-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Beetz, Jr. et al (US 6,384,519 B1) as applied to claim 9 above, and further in view of Maschke et al (US 6,263,043 B1).

Beetz, Jr. et al discloses all of the limitations of the parent claim 9, as described above. However, Beetz, Jr. is silent with regards to a patient bed. Maschke et al. discloses a medical examination system, comprising a patient bed (2) and an x-ray imaging device (3), fixed in a position extending substantially the entire length of the patient bed (See Fig. 1). Thus, it would have been obvious to a person having ordinary skill in the art to modify Beetz, Jr. et al to use a patient bed assembly, as described supra by Maschke et al, since the use of patient beds is well known in the art of imaging radiation systems and Beetz, Jr. discloses an x-ray imaging device comprising an amplification device of alternatively stacked layers of dynode material.

6. Claims 8 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Beetz, Jr. et al (US 6,384,519 B1) as applied to claims 7 and 9 above, and further in view of Goukassian et al (US 5,624,706 A).

Beetz, Jr. et al discloses all of the limitations of the claims 7 and 9, as described above. However, Beetz, Jr. is silent with regards to the upper surface of the amplification device being non-planar. Goukassian et al. discloses a method of fabricating electron multipliers and teaches large area devices can be readily produced,

efficient and inexpensive process; non-planar substrates can be processed (See Advantages). Thus, it would have been obvious to a person having ordinary skill in the art to modify Beetz, Jr. et al to use non-planar amplification device, so as to enable a more versatile apparatus disclosed supra by Goukassian et al.

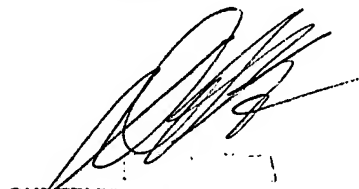
Conclusion

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Faye Boosalis whose telephone number is 571-272-2447. The examiner can normally be reached on Monday thru Friday from 7:30 AM to 4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dave Porta can be reached on 571-272-2444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

8. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

FB



Faye Boosalis
Examiner
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